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April 12, 1996

Mr. William F. Caton, Acting Secretary
Federal Communications Commission
1919 M Street, N.W., Room 222
Washington D.C. 20554

Re: Notice of Proposed Rulemaking and Order Establishing Joint Board, CC Docket No. 96-45

Dear Mr. Caton:

Enclosed are an original and 11 copies of the Comments of Cincinnati Bell Telephone Company in the above referenced proceeding. A duplicate original of these Comments is also provided. Please date stamp this as acknowledgement of its receipt. Questions regarding these Comments may be directed to Mr. Robert J. Wentz at the above address or by telephone on (513) 397-1248.

Sincerely,

David L. Meier

David L. Meier
Director - Legislative & Regulatory Planning

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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Federal-State Joint Board on	)	**CC Docket No. 96-45**
Universal Service	)	

COMMENTS OF CINCINNATI BELL TELEPHONE COMPANY

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Appendix A: "Competition and the Maintenance of Universal Service" -- Prepared by Richard D. Emmerson, Ph.D.

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Federal-State Joint Board on Universal Service	)	CC Docket No. 96-45
	)	
	)	

COMMENTS OF CINCINNATI BELL TELEPHONE COMPANY

Cincinnati Bell Telephone Company ("CBT"), an independent, mid-size local exchange carrier ("LEC"), submits these comments in response to the Commission's March 8, 1996 Notice of Proposed Rulemaking and Order Establishing Joint Board ("NPRM") in the above-captioned proceeding.[1] The NPRM was released as part of the Commission's effort to implement the universal service provisions of the Telecommunications Act of 1996 (the "Act").[2]

I. SUMMARY

The preservation of universal service and the development of local exchange competition are not necessarily compatible goals. Such compatibility is dependent upon reforming current monopoly-era rate structures and subsidies that resulted from public policy initiatives designed to support universal service. The implicit internal subsidies and explicit subsidies that were successful in fostering universal service in a monopoly environment are no longer appropriate in a competitive environment. In fact, competition destroys the traditional

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1 In the Matter of Federal-State Joint Board on Universal Service, CC Docket No. 96-45, Notice of Proposed Rulemaking, released March 8, 1996.

2 Telecommunications Act of 1996, Pub. L. No. 104-104, §254.

support mechanisms. For further discussion on how the introduction of local exchange competition will impact current mechanisms to support universal service and the economic implications thereof, see "Competition and the Maintenance of Universal Service" by Richard D. Emmerson, Ph.D., a copy of which is attached to these comments as Appendix A.

The Emmerson paper embraces several of the principles which the Commission has established as the focus for designing a funding mechanism that will preserve universal service in a competitive environment. It also addresses a number of options (e.g., rate rebalancing, deaveraging, etc.) which must be addressed in concert to achieve the preservation of universal service in a competitive environment.

A basic premise underlying universal service is that at least one service provider is obligated to provide service to customers who are high-cost and not financially attractive. This is to insure that customers who are in both high-cost and rural areas are afforded the opportunity to connect to the network and obtain at reasonable rates those telecommunications services which are convenient, necessary, and essential to education, public health, and safety. Once a truly competitive market is established, the Commission should allow market forces to determine what services should be made available and at what price.

Many states, when addressing issues related to local competition, have also addressed universal service issues, as well as Carrier of Last Resort ("COLR") obligations.[3] CBT has

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[3] See, In the Matter of the Commission's Investigation Relative to the Establishment of Local Exchange Competition and Other Competitive Issues, PUCO Case No. 95-845-TP-COI. See also, Kentucky Admin. Case No. 355. In its April 8, 1996 comments filed in this proceeding, the Kentucky Public Service Commission indicates that it will be entering an order during the summer of 1996 addressing issues relating to local competition including the preservation of universal service.

consistently asserted that neither this Commission nor the various state commissions can individually resolve all universal service issues through disjointed processes.[4] The importance of universal service issues is such that a joint effort of state and federal agencies is not only appropriate, but necessary.

While CBT generally supports most of the principles which the Commission has established as the focus for policies designed to preserve and advance universal service, CBT urges the Commission to allow the states to continue to target support for low-income consumers as state authorities are closer to this issue. Ohio and Kentucky already have programs in place[5], which would only be duplicated by any Commission action focused on support to specific population groups, rather than high-cost areas.

CBT does not support high cost credits for <u>any</u> alternative provider of local service. If competition in the provision of basic local telephone service is to emerge and prosper in an area, it must do so on its own merits, not on the basis of whether a new market entrant qualifies for or receives a subsidy. The Commission should provide high-cost support in areas where more than one local service provider cannot be economically justified, but only until such time as competition emerges or subscribership levels reach an appropriate targeted level.

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4 See CBT Comments, CC Docket No. 80-286 (filed October 9, 1995), p. 1.

5 For example, Ohio currently has a variety of programs designed specifically to deal with problems faced by low-income customers in maintaining local telephone service. These Lifeline and Link-up programs are as follows: Telephone Service Assistance, Service Connection Assistance. CBT specifically describes the operation of these programs in its Comments submitted on September 27, 1995 in the Commission's Subscribership docket, CC Docket No. 95-115.

II. SUPPORT FOR RURAL, INSULAR, AND HIGH-COST AREAS AND LOW-INCOME CONSUMERS.

A. Core Services to be Supported Through Universal Service Funding

The Commission has requested comment on which specific telecommunications services should be included, for rural, insular, and high cost areas, in a list of services which would receive universal service support.[6] CBT asserts that only the following services should be considered core services for purposes of federal universal service support:

a. Single party voice grade access line;
b. Touch Tone Dialing;
c. Blocking for Caller ID;
d. Access to Telecommunications Relay Service;
e. Access to operators and directory assistance;
f. Access to emergency services (E-911)
g. Access to all available interexchange carriers;
h. A white page listing and directory; and
i. Network repair service

While federal universal service support should be limited to the above-referenced core services, CBT submits that LECs must also be permitted to recover the costs associated with their Carrier of Last Resort ("COLR") obligations at the state level. The costs associated with being the COLR include: (1) the costs of providing local exchange service on demand throughout an entire service territory where such demand arrives randomly from the public; (2) the costs of meeting this demand in accordance with minimum service levels; and (3) liabilities resulting from having had the obligation to meet these COLR obligations in a regulated

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[6] NPRM at ¶ 15.

monopoly environment (e.g., underdepreciated capital, unamortized cost deferrals, stranded investment, standby capacity, etc.). In addition, rate rebalancing and deaveraging, which are necessary elements in any universal service support structure, should also be addressed at the state level. To compete effectively, LECs must have the ability to adjust rates to reflect cost distinctions. Allowing LECs to rebalance and deaverage their rate structures will minimize the need for subsidies and promote the development of a truly competitive environment by sending accurate economic signals to the marketplace.

B. Universal Service Support for Core Services Should be Available to All Lines In High-Cost Areas.

The Commission asks whether support for rural, insular and high-cost areas should be limited to residential users or residential and single-line business users, or whether such support should be available to both business and residential customers in these areas. CBT urges the Commission to make universal service support available for all users in high-cost areas as long as the rates for lines are above cost. To deny support to certain users or types of lines may conceivably force a service provider to sell a service at a level below cost.

C. Proposals for Calculating the Level of Universal Service Support

CBT is concerned about the continued use of the *existing* Part 36 jurisdictional separations rules in an increasingly competitive environment, especially as it may affect LECs in areas where provision of local telephone service is competitive.

1. Proposals to Revise Dial Equipment Weighting Rules

The Commission's jurisdictional separation rules provide for an allocation of investment for local switching equipment which is based on relative dial equipment minutes of use. Where a LEC study area has no more than 50,000 access lines, the interstate DEM is "weighted" to provide that a higher percentage of local switching costs is allocated to the interstate jurisdiction. This regulatory mechanism allows these local costs to be transferred to and recovered from interstate ratepayers.

As the Commission states in its NPRM, DEM weighting assists those LECs who provide service in study areas with fewer than 50,000 access lines, "on the theory that small telephone companies have higher switching costs because they cannot take advantage of economies of scale."[7] CBT serves considerably more than 50,000 access lines. Therefore, while CBT does not benefit from these weighting rules, and likely will not benefit under any revision of the rules, CBT is concerned about the continued application of this mechanism in an increasingly competitive environment, especially as it may affect LECs in areas where provision of local telephone service is competitive.

As currently constituted, the use of DEM weighting to subsidize service offered by providers with fewer than 50,000 access lines could inappropriately benefit a new entrant into the local telephone market. For example, if a new provider of local telephone service entered the market in the service area currently served by CBT, it is likely that such a competing carrier would have less than 50,000 access lines as it began to offer new service. Thus, the

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[7] NPRM at ¶ 29.

new entrant into the market would arguably be able to employ DEM weighting to recover costs for the provision of local service in a manner unavailable to its competition.

If the Commission concludes that DEM weighting is necessary, then it should only be available to existing small LECs for services provided within their existing service territories. New entrants make a business decision to enter a competitive market with intentions of growing quickly, vastly different from the circumstances most small LECs find themselves in. The Commission must not allow the DEM weighting rules to be applied to new entrants in a marketplace, nor permit a new entrant to receive a benefit under these rules which is not available to its competitors. The Commission must issue regulatory decisions concerning DEM weighting with an eye toward the emerging competitive environment for local telephone service to insure that the rules which the Commission adopts do not provide an undeserved and unearned competitive advantage to new entrants in the local telephone service market.

2. Revisions to Universal Service Support Mechanism

In this NPRM, the Commission seeks to further clarify and define universal service support, as well as examine a variety of regulatory mechanisms to minimize and more appropriately target the subsidy historically represented by the Universal Service Fund ("USF"). CBT submits that the universal service proposals on which the Commission has requested comment should be focused only on providing assistance to those companies which serve high-cost areas. The inclusion of any provision for the funding of service for low income subscribers, or for providing assistance to those who would otherwise not be able to remain on the network, should be considered by state commissions and local authorities, who are in the best position to develop responses tailored to specific populations.

CBT does not support the use of high-cost credits as a means of distributing high-cost assistance. Such a process would be burdensome to administer and would hinder the development of efficient competition. Such subsidies should not exist in a truly competitive environment, particularly where it is possible for customers to change telephone service providers several times over a short period of time.

In a competitive marketplace, the cost studies necessary to support prices are unnecessary. However, if cost studies are deemed necessary, CBT concurs with the Commission that the selection of an appropriate geographical area to determine the disaggregation of costs is critical. In order to insure the proper and accurate distribution of high-cost assistance, costs must be targeted to an area smaller than a study area. CBT asserts that allowing the calculation of loop costs for narrowly defined areas is in accord with the Commission's policy of competitive and technological neutrality, in that it assures an accurate distribution of high-cost assistance.

The Commission has requested further discussion on the issue of targeting high-cost assistance on the basis of subscriber characteristics.[8] USF assistance has historically been used as a method to subsidize loop costs in high-cost areas, not as a mechanism to provide subsidies to low-income customers.[9] While the overall goal of these two mechanisms may be similar, i.e., insuring a broader provision of service to the population, the specific methods employed for achieving this goal are very different when the focus is cost support, rather than low income subsidy.

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[8] NPRM at ¶ 30.

[9] NPRM at ¶ 30.

CBT asserts that universal service assistance should be limited to that which is necessary to provide assistance to incumbent LECs providing service in high cost areas. Mechanisms for assistance to low income consumers are best determined by state and local governments and a broad based federal policy will not be able to deal accurately and succinctly with any regional or local concerns.

CBT submits that loop costs are not static and are influenced by subscriber density, as well as the proximity to the serving wire center. This is not recognized by some of the proxy models being proposed. For example, the so-called "Benchmark Cost Model" makes many simplifying assumptions and does not capture the unique cost characteristics of each company and can grossly miscalculate the cost for a particular company. Without specific company inputs, CBT does not believe that a proxy methodology adequately represents a company's loop costs.

For example, a significant factor impacting loop costs is the price paid to vendors for cable and equipment. Small and medium size companies have less negotiating power with vendors and are likely to pay higher prices for cable and equipment than larger companies. As a result, there may be price differences between small or medium size telephone companies and large, non-traditional telephone service providers. Another factor strongly influencing loop costs is the cost of labor. Labor costs are highly company specific, and cannot be simulated by a broad national average proxy. The choice of facilities is strongly influenced by existing plant (e.g., whether facilities are underground or aerial) and construction constraints (e.g., zoning restrictions in a community which restricts aerial plant) and a proxy model must reflect such local factors.

In recent years, significant changes in technology have changed the economics of facilities deployment decisions. These changes include the use of loop electronics and the use of fiber cable in the loop plant. The Commission must recognize that technology has been and will continue to be very dynamic. Therefore, any proxy method must have provisions for adapting to these changes. If it does not, it will quickly become useless and the Commission will be forced to reexamine this issue in the near future.

D. Transition Issues

CBT does not endorse any transitional or interim plans. If competition and universal service are to co-exist, then these concepts must be implemented simultaneously. Accordingly, the existing USF should continue to be funded as is until a comprehensive plan which addresses all universal service considerations in a competitive environment is developed.

E. Eligibility for Universal Service Support

The Commission also seeks comment on the means to ensure that only eligible carriers receive the appropriate amount of universal service support.[10] CBT does not support, and urges the Commission to reject, any proposal which calls for the distribution of universal service support to new market entrants. Competition must be allowed to emerge on its own merits, not on the basis of whether a new entrant qualifies for a subsidy.

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[10] NPRM at ¶ 41.

As CBT stated in its summary, the basic premise which underlies universal service is that at least one service provider is obligated to provide service to customers who are in both high-cost and rural areas, thereby affording these customers the ability to connect to the network and obtain those services which are convenient, necessary and essential to education, public health and safety at a reasonable rate. The incumbent LECs have made investments in their networks to meet the Carrier of Last Resort ("COLR") obligation. They did so based on the expectation that they would have a reasonable opportunity to recover the entire cost of that investment.

New market entrants should not be eligible to receive universal service support since they have the ability/opportunity to enter and exit markets based on their assessment of risks and ability to generate a profit. They are free to select the form of provisioning for those services they wish to offer and this management decision to enter a market should not be allowed to be premised on the expectation that the new entrant will receive universal service support. Unlike LECs, new entrants do not have any of the obligations from past regulatory decisions such as average pricing, implicit cross product subsidies, and depreciation rates which do not reflect a competitive environment.

CBT submits that incumbent LECs must be able to recover their stranded investment which has resulted from past regulatory decisions, especially those associated with COLR and universal service obligations. These obligations imposed investment requirements on incumbent LECs to insure that service was provided to all customers, including high-cost customers, on demand. The stranded investment mechanism should be customer-specific so that if a competitor in a market takes a customer away from the incumbent LEC, the LEC would be able to continue to recapture its investment.

III. SUPPORT FOR LOW-INCOME CONSUMERS

The Commission has requested comment on whether any additional services should be designated as ". . . additional services that would be specifically appropriate for low income users."[11] The Commission also seeks guidance as to what should be its overall obligations and responsibilities with regard to low income customers.[12] As CBT has previously stated, this Commission should continue to permit the states to be the primary locus for decisions regarding the targeting of support to low income customers. This will insure that these subscribers receive adequate basic local service, in that states are in a more advantageous position to discern their constituents' needs. Both Ohio and Kentucky have programs in place which specifically address problems faced by low income customers in maintaining their local telephone service.

In Ohio, these services are the Telephone Service Assistance ("TSA") and the Service Connection Assistance ("SCA") programs. In Kentucky, the program is entitled Link-Up Kentucky. The operations of these programs were fully described in the September 27, 1995 Comments submitted by CBT in this Commission's subscribership docket.[13]

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[11] NPRM at ¶ 50.

[12] NPRM at ¶ 50.

[13] CBT Comments, In the Matter of: Amendment of the Commission's Rules and Policies to Increase Subscribership and Usage of the Public Switched Network. CC Docket No. 95-115. pp. 5 - 8.

The Commission also seeks comment on where toll limitation services are available, should they be offered to low income customers either at no charge or at a discount. CBT has offered voluntary call blocking since 1990 as a tool to help control a customer's toll charges and keep them on our network. 1+, 0+, and 0- calls are blocked with this feature while 800 and collect calls are permitted. This feature is utilized in certain cases prior to denying service.

CBT does not believe that the Commission should mandate telephone service to include toll blocking. For the Commission to order this without considering the specific situations faced by LECs in providing service to their customers would be an extreme burden to LECs, in that they would be denied the flexibility needed to serve their customers in an increasingly competitive marketplace. CBT believes that it is imperative that the Commission allow the states and the companies who operate in those states the flexibility to design programs which best suit the needs of their customers.

IV. SCHOOLS AND LIBRARIES

A. Goals and Principles

CBT agrees that access to telecommunications services are important to schools, classrooms, and libraries. However, CBT believes these issues should be addressed at the state level, rather than by federal mandate. As part of CBT's alternative regulation plan in Ohio, CBT has agreed to develop and implement a plan to promote telecommunications-based educational applications. These applications include distance learning within the Clermont County Ohio school system, as well as developing long-range telecommunications plans that consider the telecommunications needs of the state-chartered public and private primary, secondary, and post-secondary schools within the CBT operating territory. CBT has also agreed to work with the Cincinnati Public Schools to determine the technology needs of the school system and to address the unique and specific needs of the school system. These needs will potentially include, but not be limited to ISDN, the application of Centrex, data networking and distance learning applications.

B. What Services for Schools and Libraries Should Receive Universal Service Funding Assistance?

CBT believes that only those previously outlined core services should be supported by a universal service support mechanism. However, if the Commission should establish that other services are to be provided at a discount to schools and libraries, then the LEC must be eligible to receive universal service support for providing those services.

V. ADMINISTRATION OF SUPPORT MECHANISMS

A. Who Should Contribute?

The NPRM asks commenters to identify which service providers fall within the scope of the term "telecommunications carriers that provide interstate telecommunications services" for purposes of contributing to universal service support. CBT believes the above-quoted term should include incumbent LECs, new local service providers, IXCs, CAPs, cellular and PCS providers, resellers and other future providers of service which have yet to be defined.

CBT urges the Commission not to permit an exemption for those carriers whose contribution is *de minimis*. CBT submits that all telecommunications carriers should be required to contribute at some appropriate level consistent with the policy goal to support universal service.

B. How Should Contributions Be Assessed?

CBT supports the Commission's proposal which would base the level of contribution to universal service mechanisms on gross interstate revenues. CBT submits that such a methodology would be equitable and nondiscriminatory, as required by Section 254(d) of the Act, and relatively easy to administer.

C. Who Should Administer the Funding Mechanism?

CBT agrees that universal service support should be administered in an efficient, fair and competitively neutral manner.[14] CBT urges the Commission to employ an independent third party to administer the funding mechanism. In selecting an appropriate administrator, the experience, competency, and credentials of the third party in managing large funds should be considered by the Commission.

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[14] NPRM at ¶ 128.

VI. CONCLUSION

CBT respectfully requests the Commission to consider these comments as it develops possible revisions to universal service funding mechanisms in light of the enactment of the Telecommunications Act of 1996. As the Commission determines which service providers will be eligible to receive universal service assistance and what core services will be supported, CBT urges the Commission to insure that its policy choices do not impose additional burdens on incumbent carriers and provide competitive advantages to new entrants.

Respectfully submitted,

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Dated: April 12, 1996

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Appendix A

COMPETITION AND THE MAINTENANCE OF UNIVERSAL SERVICE

Prepared By:

Richard D. Emmerson, Ph.D.
of INDETEC Corporation

November 1, 1995

COMPETITION AND THE MAINTENANCE OF UNIVERSAL SERVICE

I. INTRODUCTION

For over 60 years, universal service has been held sacred by most public policy authorities and has been aggressively pursued by telephone companies. The policy has not been clearly and unambiguously defined in ways which have been widely accepted. Economists have for decades failed to measure the social costs and benefits of universal service. Yet far reaching public and private decisions have relied on this policy to affect the very fabric of our daily lives. As a result of "universal service", nearly every resident and business has affordable instantaneous voice access to nearly every other premise. The economic success of the world's economies appear to be highly correlated with the universality of service (of course, the assignments of cause and effect may be debated here). It is therefore not surprising that few public policy authorities appear willing to advocate abandoning this loosely defined policy. The advent of competition in local telecommunications markets, however, will fundamentally alter the traditional mechanisms employed to ensure universal service. In the face of these changes, public policy authorities must have a clearer idea of what "universal service" is, how it is funded, and what must be done to sustain this goal.

In this brief treatise, I attempt to define clearly a universal service policy and to explain the economic principles, practices, and policies which then follow. Section II provides a taxonomy of concepts and terms used throughout the document. Section III describes the pertinent economic principles applicable to universal service. Section IV evaluates alternative public policies which may promote or sustain universal service.

II. WHAT IS UNIVERSAL SERVICE?

Diverse and numerous issues are carried under the banner of "universal service". While not all of the issues listed below are included in any one definition of universal service, each issue should be considered as a member of a related universal service portfolio rather than as separate problems. For reference here, names are attached to the important concepts; there is no universal convention regarding the use of these names. Collectively, the listed concepts will be called the Community Service Obligations, or CSO.

Widespread Availability

A policy deeply entrenched in U.S. telecommunications is that of ubiquitous availability of basic telephone services. Franchised telephone operators have had obligations to extend the Public Switched Telephone Network (PSTN) to pass, or even reach, nearly every home and business in the nation. Telephone subscription has been expected to exceed 90% of occupied residences and nearly all businesses. Widespread availability has typically taken two forms: the Universal Service Policy[1] (USP -- the term is used for present purposes to imply that the Public Switched Telephone Network serves a minimum acceptable percentage of homes or population), and Carrier Of Last Resort (COLR -- implying that a designated carrier must serve or be ready to serve any premise which is not served by another carrier). The COLR takes two forms: 1)the COLR must construct plant to (nearly)[2] every premise in its prescribed service area (even if competing facilities are in place or in use) and 2) the COLR must construct plant only to those premises which are not capable of being served by competing facilities-based service providers. I will call the former the "hard" COLR obligation and the latter the "soft" COLR obligation.

Affordable Rates

"Affordable rates" has been portrayed as a means to accomplish a high degree of subscribership to the PSTN. While "widespread availability" provides nearly ubiquitous accessibility to the PSTN, the goal of "universal service" has been monitored in terms of the percentage of homes (and businesses) actually subscribing to service (among other measures). Thus affordable rates has been viewed as a means of accomplishing the US objective.

In other situations, the goal of "affordable rates" has become a public policy independently of "widespread availability". In particular, there have been two predominant effects of the policy of "affordable rates": geographically averaged rates which do not reflect the underlying cost differences as they vary by network density, distance from switching centers, and other factors; and subsidized rates for "basic" local services, particularly residential subscriber access and local usage. The "affordable rates" policy has also been furthered by monitoring efficiency of operations. Prudency reviews, management audits, and incentives to reduce costs

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[1] The first use of the term, Universal Service, referred to the desire to interconnect competing and fragmented networks which existed during the first decade of the twentieth century.

[2] Many LEC's in the United States may change a network extension free for expanding the network beyond a prescribed distance.

have been motivated in part by the desire to maintain low telephone costs and therefore low associated rates.

Public Accommodations

Telephone carriers have been expected to accommodate others for public convenience. Access to telephone poles by CATV and electric power companies, access to the PSTN by long distance companies and other telephone companies, and access to easements or right of way privileges are examples of Public Accommodations.

Public Services

Certain services have been expected to be provided or administered by incumbent telephone carriers. Emergency services (911), access to operators, public telephones, repair services, annoyance call control, and services required by government agencies (*e.g.*, for national defense and crime prevention) are examples of public services.

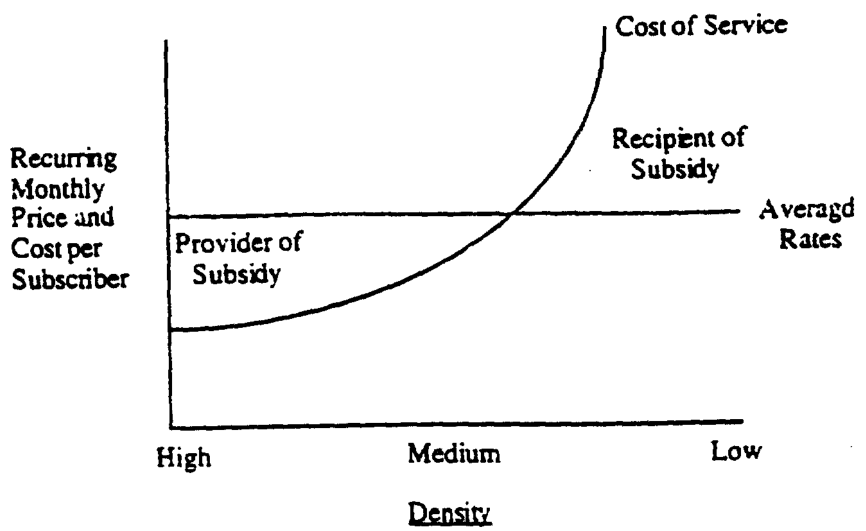
The responsibility for these CSOs must be addressed as the local telephone business is opened to competition. In particular, any of these obligations which public policy requires of a designated carrier, and which would not voluntarily be fulfilled by competing companies, must be identified. Both mandatory obligations and associated funding mechanisms need to be designed and implemented in a manner which is viable in a competitive environment and which provides the least distortion of the benefits of competitive markets.

III. ECONOMIC PRINCIPLES & PUBLIC POLICY

Fulfilling Community Service Obligations can force loss-making activities on the obliged service provider in two ways. First, an obligation may require that a particular segment of the service provider's business be priced below its incremental cost or below a level which would be required by a competitive firm in order to pay its underlying shared costs (including the so-called common costs of doing business). The "underpriced" segment of business may be a customer class (*e.g.*, residential), a geographical area (*e.g.*, averaged statewide rates below incremental cost in high cost areas), an individual transaction (*e.g.*, public telephone access to an operator service for which there is no charge), or any other portion of the firm's business. Second, the firm as a whole may be obliged to engage in loss-making operations even though each of the firm's segments of business are compensatory. For example, the service provider may be obliged to provide a scope of services for a geographical area in a manner which would be less efficient than if the service provider did not have Community Service Obligations. While each individual portion of the market may be priced at or above the respective incremental costs, the service provider may be required to serve an inefficient scope[3] of services. A competing firm which is allowed to select a more efficient scope of services, such as a niche market, may force the prices to be below that which allows the firm with the Community Service Obligation to cover its common costs. Four illustrations of loss making operations will clarify some fundamental problems of obligatory loss making in the face of competitive entry.[4]

1. "Average" rates across geographical areas may help provide telephone service to high cost areas at rates below cost, subsidizing the loss with rates above cost in the low cost areas.

Figure 1



Averaged rates have the obvious benefit of funding widespread availability through an internal cross-subsidy. Averaged rates only work, however, when the providers of the subsidy operate in an uncontested market. If competition is introduced into such a market, the carrier with the CSO will lose the source of subsidy payments from the profitable areas and must find the subsidy funds elsewhere.

[3] The "scope" of service may refer to a product scope, a geographical scope, etc.

[4] Diagrams illustrate concepts, not quantitative estimates of numeric values. It is also assumed that the average rate is set to exactly cover total cost including a competitive return on equity.

For example, consider the situation in which there are exactly ten end users in each density cell (high, medium, and low). First assume that only one provider, the incumbent Local Exchange Company (LEC), serves this market. If we further assume that the cost to each customer in the density cells is $10, $20, and $30, respectively, and the geographically averaged rate is $20 per end user, then the cost and revenue implications are as depicted in the following table. Notice that there is no overall subsidy required; the "subsidy" is internal to the service itself across all density cells.

Table 1

Density	Total Revenue	Total Cost	Subsidy Required
High	200.00	100.00	+100.00
Medium	200.00	200.00	0.00
Low	200.00	300.00	<100.00>
Total	600.00	600.00	0.00

The underlying problem arises when competition is introduced to this market. Assume that a new entrant is able to win twenty percent of the incumbent's high density cell customers. If the revenues are lost and the (long run) costs are saved[5] by the LEC, then a newly revealed overall subsidy requirement of $20 arises ($20 in cost is saved but $40 in revenue is lost in the high density cell, meaning that the high density cell provides only $80 to defray the $100 lost in the low density cell). As market shares continue to shift over time from the incumbent to the new entrant, the required subsidy will grow.

Averaged rates and the attendant cross-subsidization promote both Widespread Access and Affordable Rates in a monopoly environment. However, as competition is allowed and becomes technically and economically feasible, entry occurs in the profitable (primarily low cost) areas. The result is the incumbent's loss of "providers of subsidy," necessitating increased rates to the remaining (higher cost) customers. In the end, competition would force "deaveraged" rates (the competitive rates of the entrant would prevail in low cost areas and higher averaged rates of the incumbent would occur due to higher average costs of the incumbent among its remaining customers). Thus, maintaining an averaged rate policy in the face of competition will require intervention, funding, and/or management of

[5] Here we assume all costs are volume-sensitive in the long run. The subsidy requirement would be larger if there were underlying fixed costs.